



**ANS** Meetings

**IT'S GO TIME**

*Creating Momentum Toward  
Transformational Change*

# **NRC Transformation Journey**

**THE FUTURE IS NOW**

**Daniel Dorman**

**Deputy Executive Director for Operations**

**Office of the Executive Director for Operations**

# Why we need to get on this journey?



keep pace with  
the highly dynamic,  
interconnected  
environment

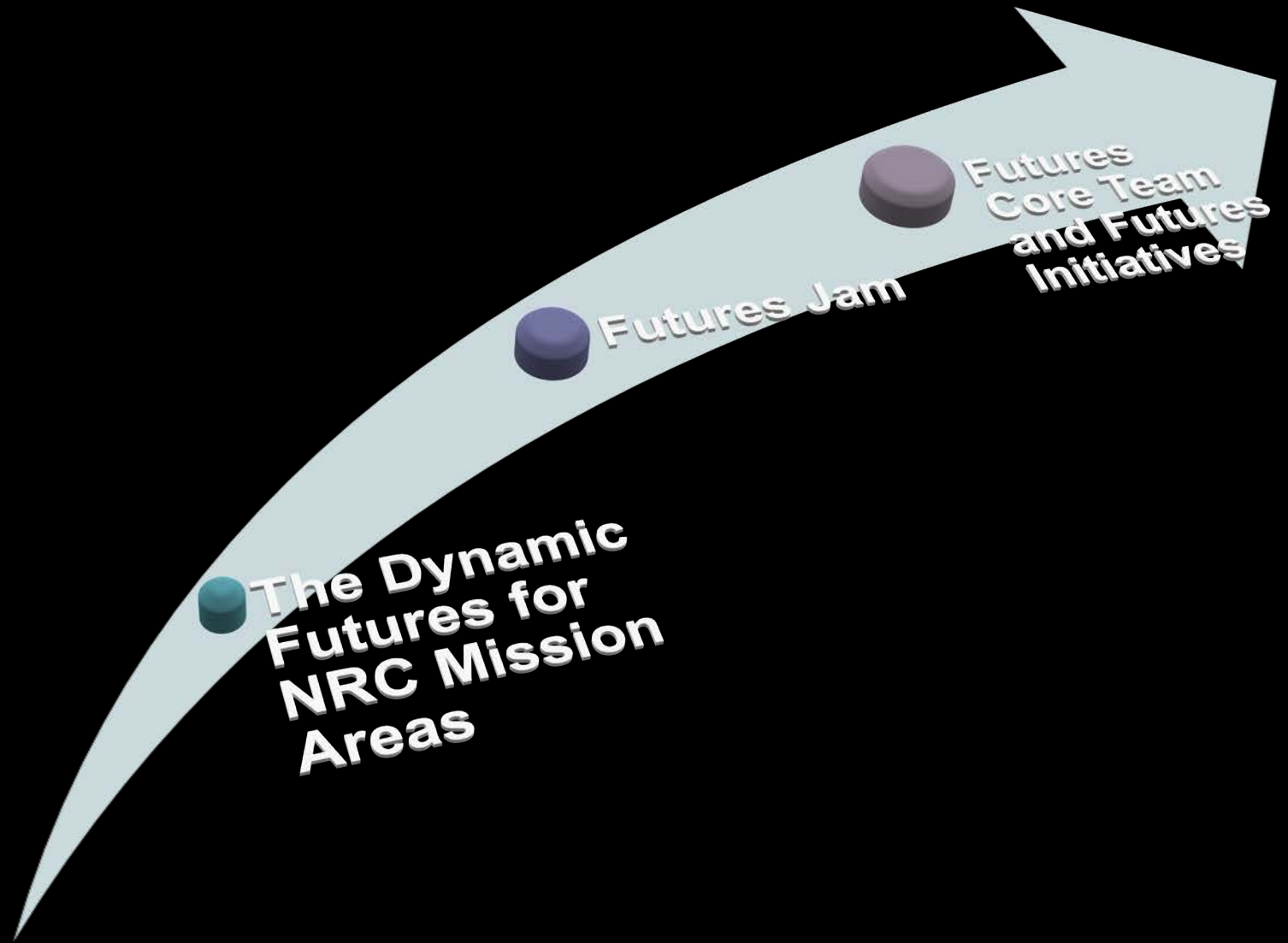


be prepared to  
regulate an industry  
that is innovative and  
has new technologies



re-evaluate the way we  
conduct our business to  
optimize processes and  
procedures in order to  
better serve the American  
public

# TRANSFORMATION BACKGROUND



# Becoming a modern, risk-informed regulator

How will we know  
when we've truly  
become a modern,  
risk-informed  
regulator?

- We will make sound decisions while accepting **well-managed risks** in decisionmaking.
- We will **use technology** to work smarter, including using data analytics to highlight areas for regulatory attention and improvement.
- We will be **innovators** who make timely decisions that take into account different viewpoints and fully explored options.
- We will maintain an engaged and highly skilled **workforce** now and in the future.

# Becoming a modern, risk-informed regulator

## THE FOCUS AREAS

**Our People**

**Be riskSMART**

**Technology**

**Innovation**

## FUTURES INITIATIVES



### **AGENCY DESIRED CULTURE**

*Aligning our behaviors and mindsets with our transformation vision.*



### **CAREER ENHANCEMENT**

*Identifying and communicating how the agency's human capital programs are assessed and how they support current and future workforce needs.*



### **EMPLOYEE JOURNEY**

*Clarify career paths to support retention and drive engagement and career development.*



# Becoming a modern, risk-informed regulator

## THE FOCUS AREAS

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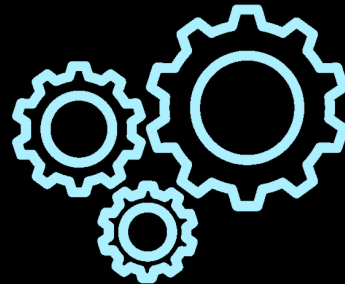
**Innovation**

## FUTURES INITIATIVES

**Be riskSMART**

### **BE RISKSMA**

*Developing and implementing a framework that will give staff confidence in accepting risk in our decision-making without compromising the NRC's mission.*



### **PROCESS SIMPLIFICATION**

*Enhancing the efficiency and effectiveness of agency work processes, such as document production and concurrence.*

# Becoming a modern, risk-informed regulator

## THE FOCUS AREAS

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**Innovation**

## FUTURES INITIATIVES



### **TECHNOLOGY ADOPTION**

*Enhancing adoption and training for IT services to ensure the services have maximum impact on day-to-day agency work*

# Becoming a modern, risk-informed regulator

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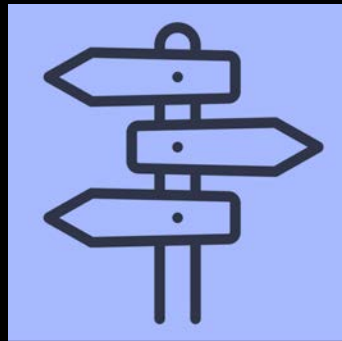
**Innovation**

## FUTURES INITIATIVES



### **INNOVATE NRC 2.0**

*Designing and implementing a best-in-class program to help create a culture that supports an innovative mindset.*



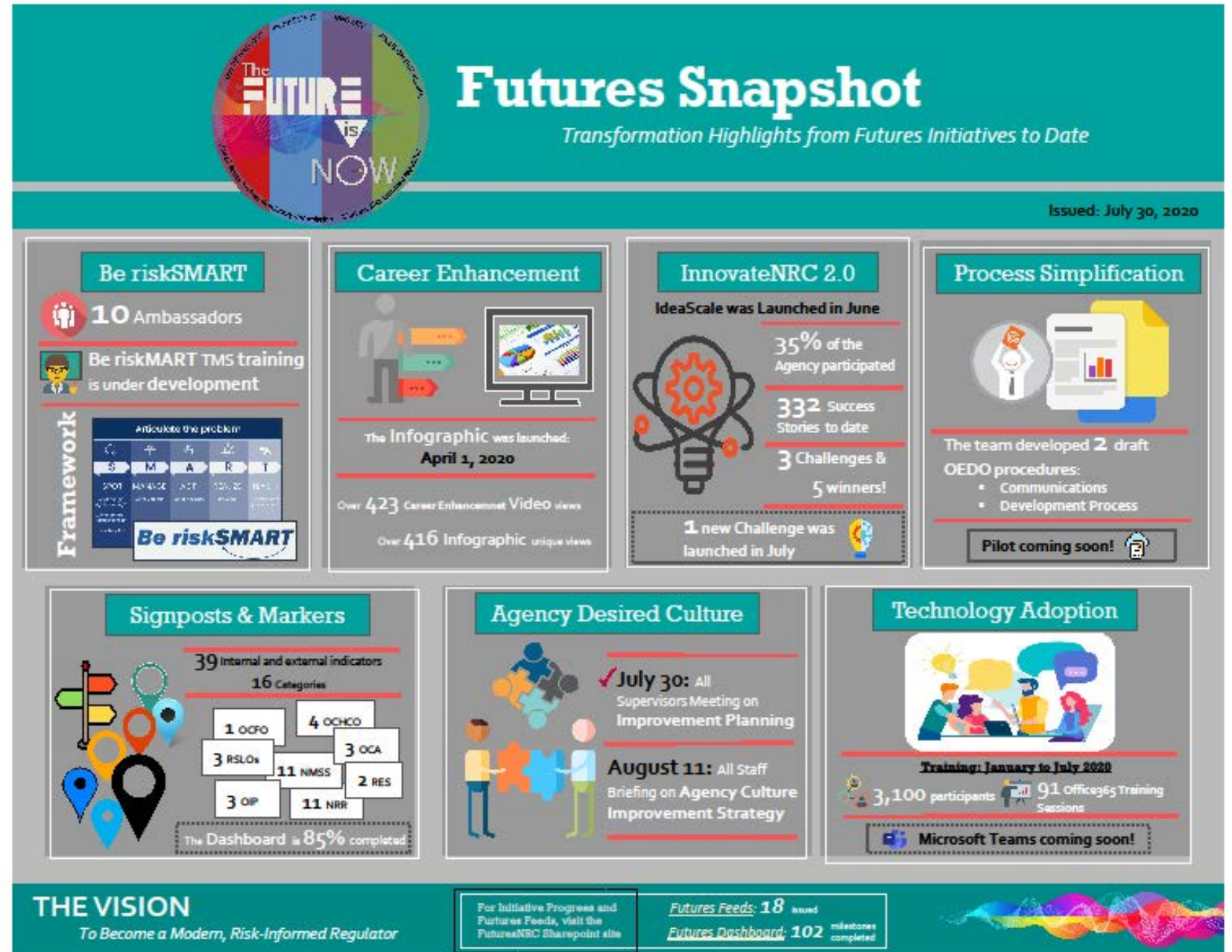
### **SIGNPOSTS & MARKERS**

*Determining which external factors will have the greatest effect on the agency's future mission portfolio and developing an approach to measure and track indicators to support strategic decision-making.*



# FUTURES SNAPSHOTS

## *Transformation Highlights from the Futures Initiatives to Date*





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# **Be RiskSMART: Risk-Informing All Aspects of NRC's Decisionmaking**

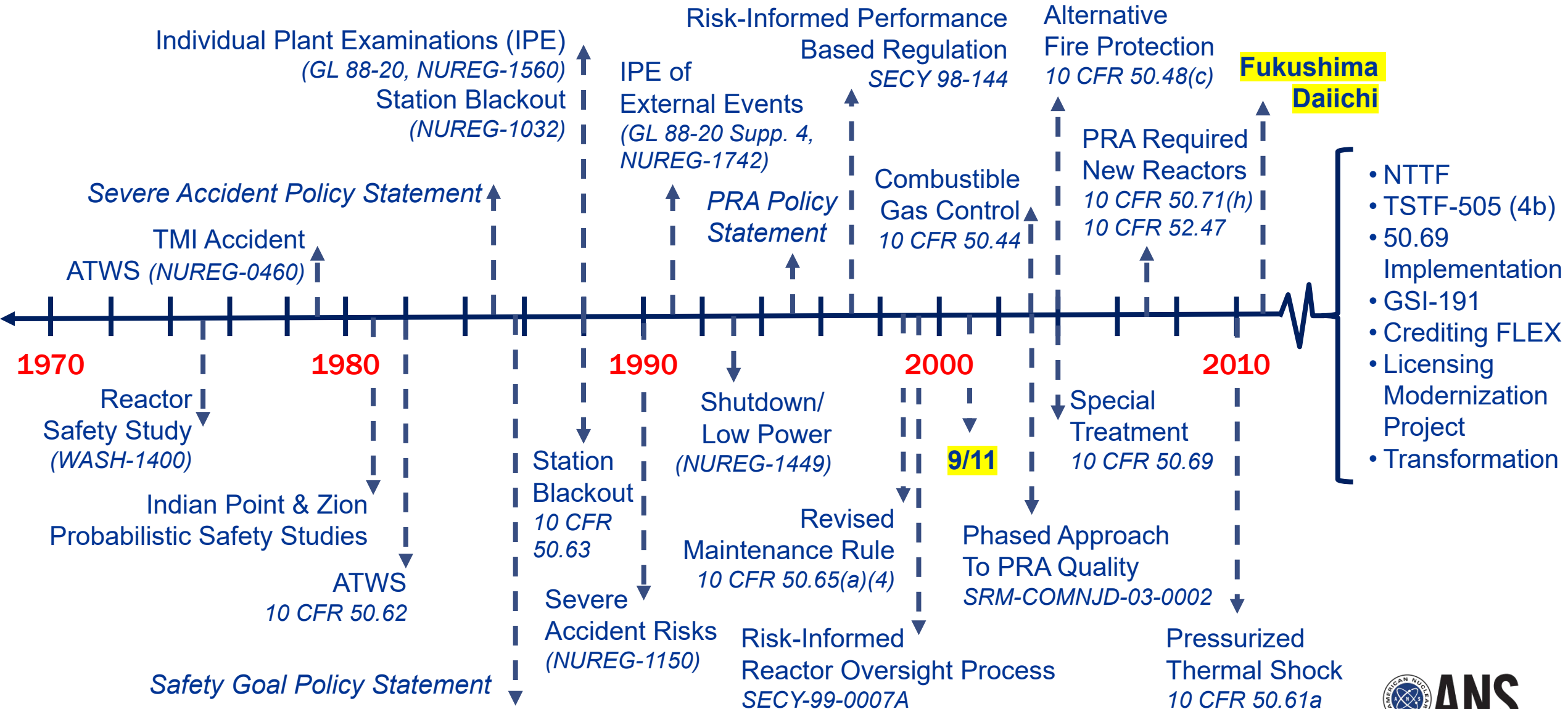
**Mirela Gavrilas, Ph.D.**

Deputy Director for Reactor Safety Programs and Mission Support

Office of Nuclear Reactor Regulation



# Long, long, history...



- NTTF
- TSTF-505 (4b)
- 50.69 Implementation
- GSI-191
- Crediting FLEX
- Licensing Modernization Project
- Transformation



# Challenges

Inconsistent management support and expectations

Treatment of low likelihood events

Reluctance to adapt processes

Applied too late in process

Limited awareness of guidance

Siloed organization

Rigid interpretation of regulations

Lack of guidance

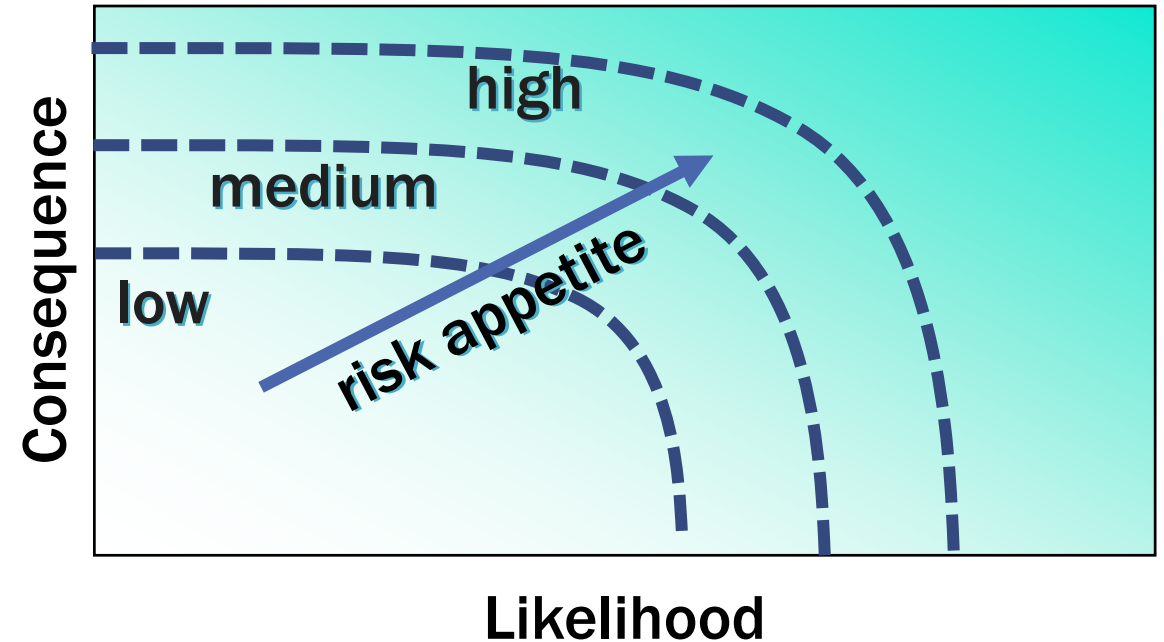
Limited consideration of benefits

Potential flexibilities not reflected in guidance

Presence of uncertainties

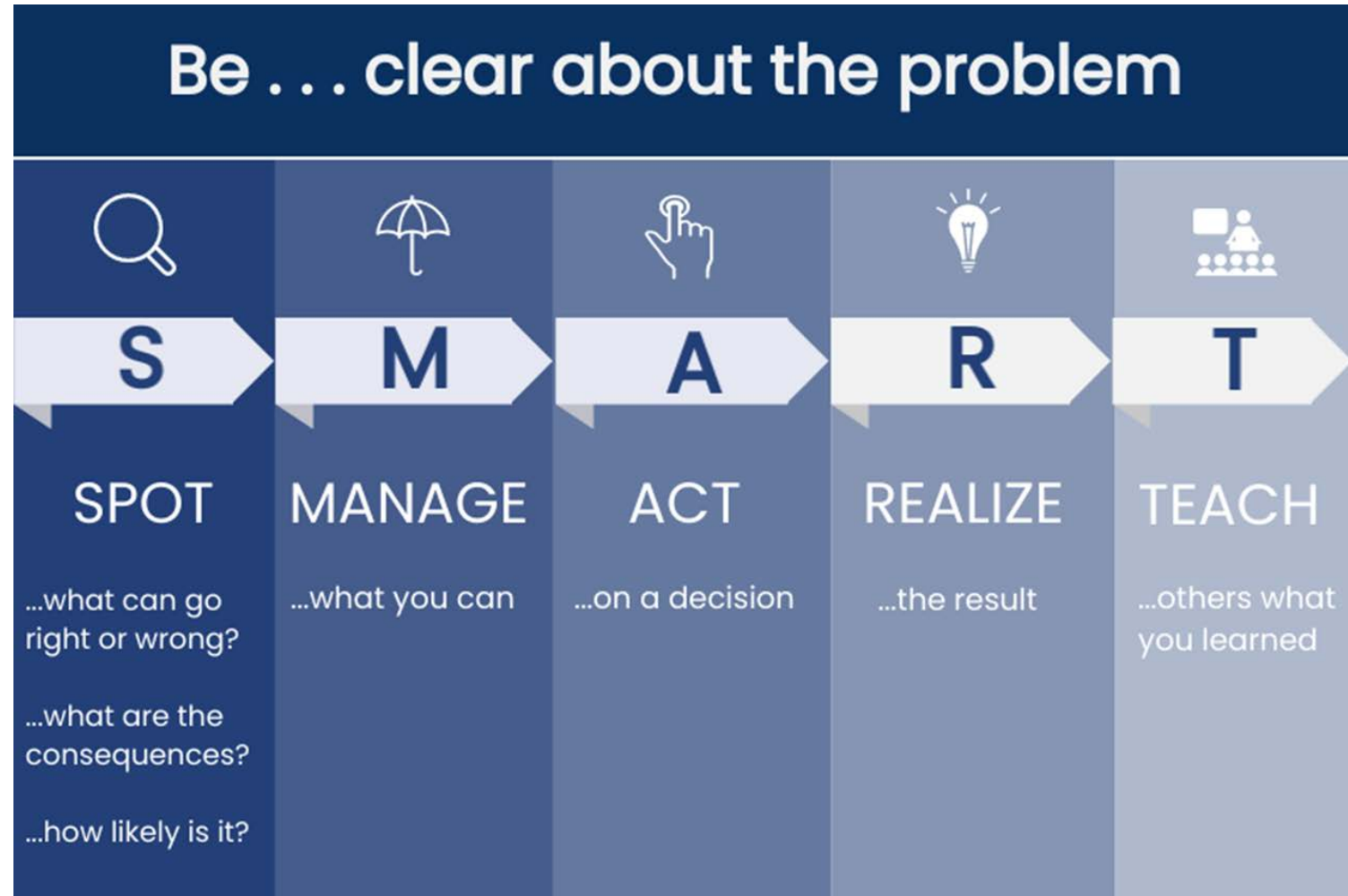
# Approach

- Common high-level framework, applicable to all disciplines (e.g., technical, legal, corporate)
- Not revisiting any existing criteria
- Enable NRC staff to consider risk systematically
- Simple and plain English
- Increasing consistency, awareness, and usability of existing risk-informed approaches
- Have not identified any examples at odds with the Be riskSMART framework





# *Be risk***SMART**



Emergent  
Safety  
Issues

## NRC Uses Its **REACTOR SAFETY** Guidance and Tools to *Be riskSMART*

S	M	A	R	T
SPOT	MANAGE	ACT	REALIZE	TEACH
...what can go right or wrong?	...what you can	...on a decision	...the result	...others what you learned
...what are the consequences?				
...how likely is it?				

COVID-19  
Oversight  
Strategy

Key Principles of  
Risk-Informed  
Integrated  
Decisionmaking

Regulations Met					
Defense-in-Depth Consistency					
Maintenance of Safety Margins					
Risk Analysis					
Performance Monitoring					

Guidance  
or  
Processes

Standard Review Plan (NUREG-0800)	S	M	A		
Regulatory Guide 1.174	S	M	A	R	
Licensing Modernization Project (LMP)	S	M	A	R	
Enhanced Safety Focused Review (ESFRA)	S	M	A		
Reactor Oversight Process	S	M	A	R	
Backfit Process (MD 8.4, NUREG-1409)	S	M	A		
Process for Emergent Issues (LIC-504)	S	M	A		
Notice of Enforcement Discretion	S	M	A		

Risk-  
Informing  
License  
Renewal

Formal RG 1.174  
Risk-Informed  
Licensing Actions

Integrated  
Safety  
Assessment

## NRC Uses Its **MATERIAL SAFETY** Guidance and Tools to **Be riskSMART**

Key Principles  
of Risk-  
Informed  
Integrated  
Decisionmaking

Regulations Met	
Defense-in-Depth Consistency	
Maintenance of Safety Margins	
Risk Insights – Operational Experience	
Performance Monitoring	

Guidance  
or  
Processes

Risk Informed Standard Review Plans	
Integrated Acceptance Reviews	
Pre Licensing Interaction Enhancement	
Graded Approach to Licensing	

## NRC Uses Its **CORPORATE SUPPORT** Guidance and Tools to **Be riskSMART**

Overarching  
Principles

Compliance, Stewardship, Fairness, Creating and Maintaining Value, Improvement	
Accountability, Transparency	

Guidance  
or  
Processes

Enterprise Risk Management (OMB A-123, MD 4.4, OEDO Procedure 0960)	S	M	A		
NIST Risk Mgmt. Framework (SP 800-37, Rev. 2)	S	M			
GAO Fraud Risk Mgmt. Framework (GAO-19-34)	S	M			
Guidance (DHS, EEOC, GAO, GSA, NIST, OMB, OPM, Treas), Professional Associations	S	M			
Separation of Duties, Control Activities, Reconciliations (GAO-14-704G)		M		R	
Information Systems		M	A	R	T
SECY Paper Process and Commission Briefings	S	M	A	R	
Committees (HCC, IPEC, PSAT, SAT, SSG)			A		
Gov Dashboards, Reports (Congress, OMB)				R	
Audit, Assessment, and BPI Reports; Interagency Wk Grp; KM and Training Materials	S				T

\* Examples from  
corporate support  
product lines

S	M	A	R	T
SPOT	MANAGE	ACT	REALIZE	TEACH
...what can go right or wrong?	...what you can	...on a decision	...the result	...others what you learned
...what are the consequences?				
...how likely is it?				

Plans and User Agreements	
Research	
nal Tools & Infrastructure (SOARCA, P, TRACE, MELCOR, SAPHIRE, XLPR,	
Guidance Development (TEC-004)	
a of Understanding	
al Agreements	

Forward  
Funding  
Research

## NRC Uses Its **RESEARCH** Guidance and Tools to **Be riskSMART**

Overarching  
Principles

Advances in Science and Technology for Materials and Reactor Safety and Security	
Specialized Technical Expertise	
External Collaboration	

NEPA Review  
for Relief  
Requests

S	M	A	R	T
SPOT	MANAGE	ACT	REALIZE	TEACH
...what can go right or wrong?	...what you can	...on a decision	...the result	...others what you learned
...what are the consequences?				
...how likely is it?				

## NRC Uses Its **OGC LEGAL ADVICE** Guidance and Tools to **Be riskSMART**

Provide clear, candid, and sound legal advice

Engage in creative problem-solving, develop viable  
legal options, and provide effective representation

Communications are comprehensive, persuasive,  
factual, clear, logical, & targeted to the audience  
(e.g., EDO initiative to enhance quality of  
communications)

Applicable law (statutes, regulations, cases, etc.)	S	M		R	T
Commission direction (e.g., Policy Statements, SRMs, ICPs, Principles of Good Regulation)	S	M	A		T
Legal research tools (e.g., Westlaw, HeinOnline)	S	M		R	T
Best OGC advice (MactKM, others advice, KM tool)	S	M			T

Fee  
Billing

## NRC Uses Its **Security, Preparedness, & Response** Guidance and Tools to **Be riskSMART**

Key Principles of  
Risk-Informed  
Integrated  
Decisionmaking

Regulations Met	
Defense-in-Depth Consistency	
Maintenance of Safety Margins	
Risk Insights – Operational Experience	
Performance Monitoring	

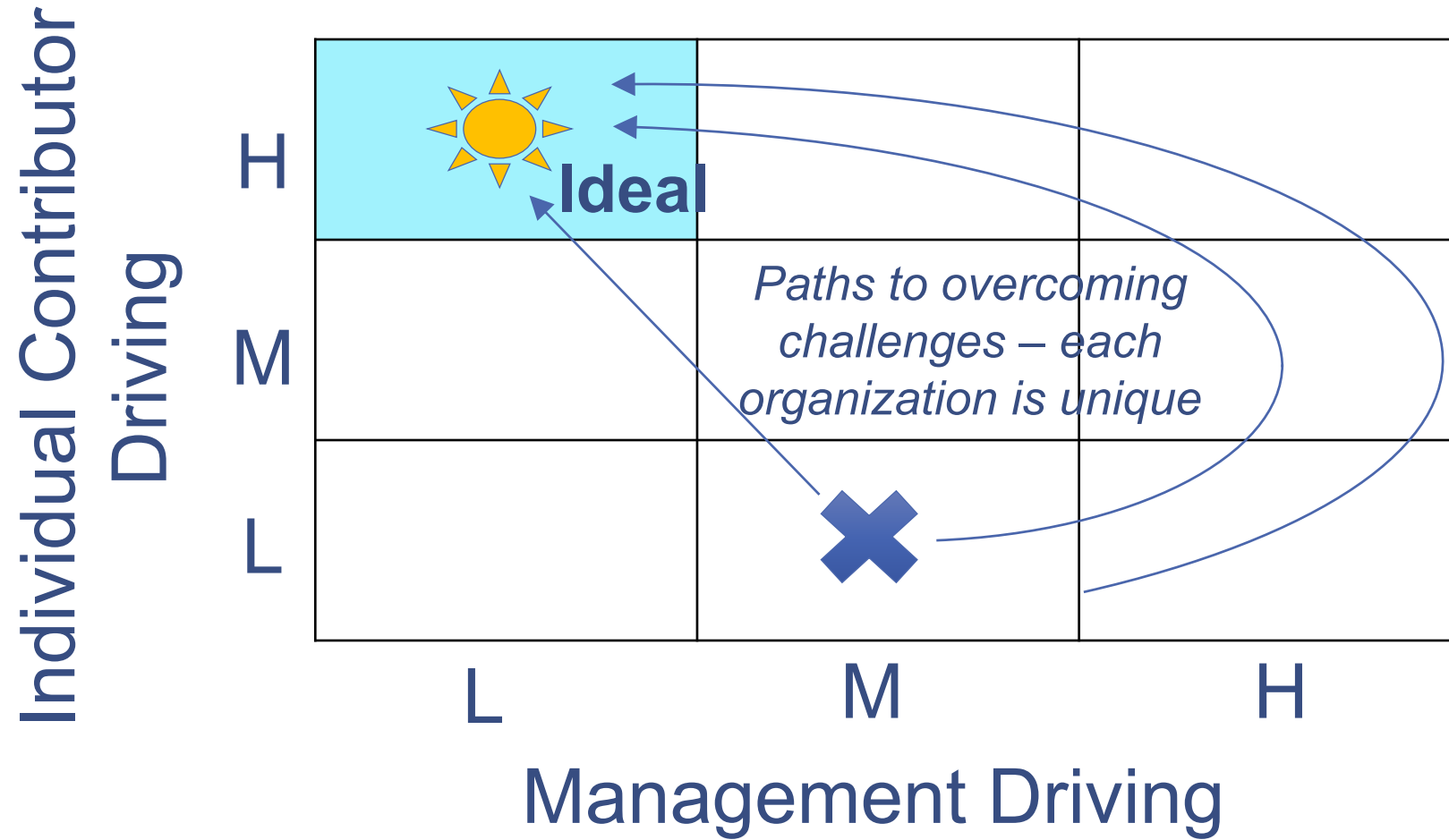
Guidance  
or  
Processes

Risk Informed Security & EP Oversight	S	M	A	R	
Interagency and External Coordination	S	M			
Graded Approach to Licensing	S	M			
Graded Approach to Rulemaking	S	M	A		
Barriers Process (MD 8.4, NUREG-1409)	S	M			
Graded Approach to Incident Response	S	M			
Discretion	S	M			
Standard Review Plans	S	M			

Risk-Informed  
Security

Summer  
Hires  
Recruiting

# Are we there yet?







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**Shaun M. Anderson**

**Co-Founder**





# EMBARK



VENTURE STUDIO

# VISION

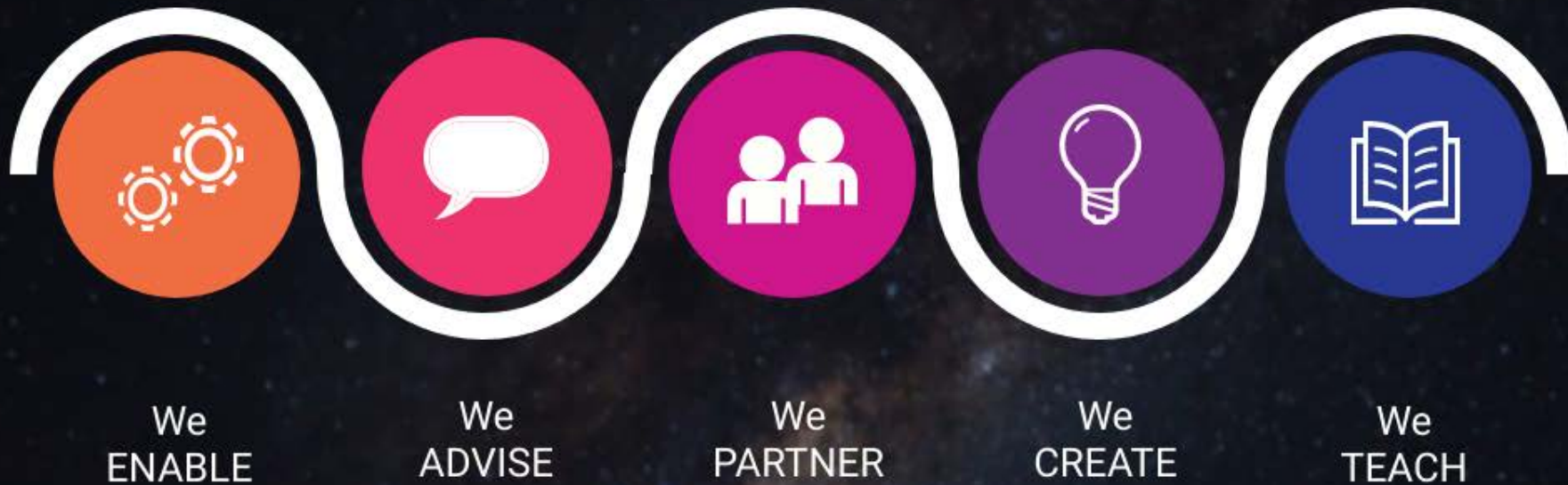
Give staff the courage to make real change

# MISSION

We are creative catalysts who remove barriers to innovation and launch initiatives that improve the way we work to make SAFE use of nuclear technology POSSIBLE

# OPERATING MODEL

No two EMBARK projects are alike - so how we engage varies.



**We INSPIRE.**



# EMBARK

VENTURE STUDIO

## DEPARTMENTS

### THE GARAGE

The Garage is our process improvement effort. It is the place where we tune up our processes and upgrade our procedures to transform the way we regulate for the nuclear future. We are looking at our approach and prototyping new ideas.



### NEXTGEN DATA

NextGen Data is focused on taking data to the masses, leveraging the data we have in innovative ways to bring transparency and greater understanding for better regulatory decisionmaking.



### NEUROLOGY

Neurology is about understanding risk, overcoming fear of failure, challenging the status quo, and breaking down barriers. We envision an Agency that proactively and creatively adapts to our environment while staying true to our mission.



### #HASHtagChange

HAShtagChange is all about improving the experience for our internal and external stakeholders and providing more effective tools that enhance the way we interact with each other.







ASME Code  
Rulemaking



Request for Confirmatory  
Information



Web-based  
Online Submissions

## ELEVATING THE "*BUSINESS AS USUAL*"



Mission Analytics  
Portal



Risk Informed Process  
for Exemptions



Subsequent License  
Renewal Enhancements





# Operation Rango

THE SYNDICATE IS HERE.



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# Transformation- A Regional Perspective

Jonathan Greives

Chief, Projects Branch 4

Division of Reactor Projects

NRC Region I



# Transformation Initiatives

- Regional staff continue to support and remain engaged with the various transformation initiatives
  - Executive Sponsors
  - Team Leaders
  - Team Members





# Reactor Oversight Process (ROP)

- ROP has been and remains risk-informed
- Continuous improvement is a key aspect of any risk-informed process





# ROP Improvements

**Focus**



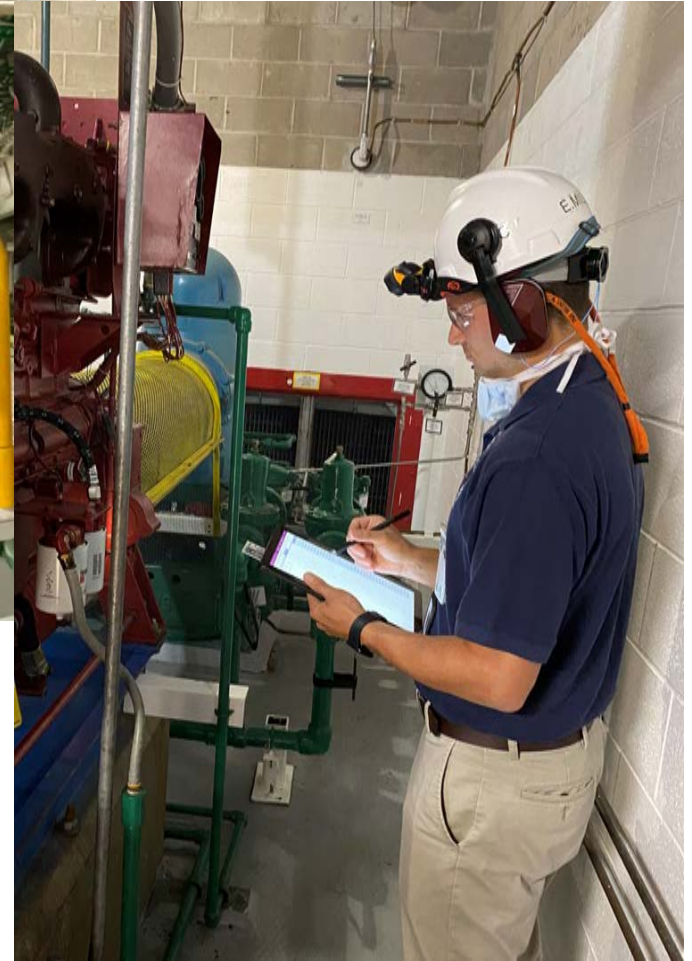
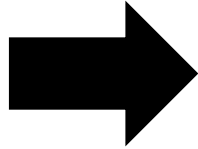
**Agility**



**Policy**



# Adoption of Technology





# ROP Implementation During COVID-19

- Continued monitoring of plant activities through inspections and oversight

